

Name: \_\_\_\_\_

**Worksheet – Adding and Subtracting Non-Variable Radical Expressions Containing Square Roots**

Directions: Please simplify the following. Express your answers with exact numbers.

1.  $3\sqrt{7} - 4\sqrt{7}$

$(-\sqrt{7})$

2.  $7\sqrt{6} - 9\sqrt{6} + \sqrt{6}$

$(-\sqrt{6})$

3.  $-25\sqrt{5} - 4\sqrt{7} + \sqrt{5} - 2\sqrt{7}$

$(-24\sqrt{5} - 6\sqrt{7})$

4.  $-8\sqrt{22} - 9 + 10\sqrt{22}$

$(2\sqrt{22} - 9)$

5.  $6\sqrt{8} - 4\sqrt{8}$

$2\sqrt{8}$   
 $2 \cdot 2\sqrt{2}$   
 $(4\sqrt{2})$

6.  $10\sqrt{12} - 11\sqrt{6} + 7\sqrt{12}$

$17\sqrt{12} - 11\sqrt{6}$   
 $17 \cdot 2\sqrt{3} - 11\sqrt{6}$   
 $(34\sqrt{3} - 11\sqrt{6})$

7.  $11\sqrt{3} - 4\sqrt{12} + \sqrt{3}$

$11\sqrt{3} - 4 \cdot 2\sqrt{3} + \sqrt{3}$   
 $11\sqrt{3} - 8\sqrt{3} + \sqrt{3}$   
 $(4\sqrt{3})$

8.  $\sqrt{48} - \sqrt{75} + \sqrt{8}$

$4\sqrt{3} - 5\sqrt{3} + 2\sqrt{2}$   
 $(-\sqrt{3} + 2\sqrt{2})$

9.  $-\sqrt{5} - 4\sqrt{50} - \sqrt{5}$

$-\sqrt{5} - 4 \cdot 5\sqrt{2} - \sqrt{5}$   
 $-\sqrt{5} - 20\sqrt{2} - \sqrt{5}$   
 $(-2\sqrt{5} - 20\sqrt{2})$

10.  $-2\sqrt{3} + \sqrt{27}$

$-2\sqrt{3} + 3\sqrt{3}$   
 $(\sqrt{3})$

11.  $5\sqrt{6} - 4\sqrt{54}$

$5\sqrt{6} - 4 \cdot 3\sqrt{6}$   
 $5\sqrt{6} - 12\sqrt{6}$   
 $(-7\sqrt{6})$

12.  $3\sqrt{6} - 7\sqrt{24} + \sqrt{6}$

$3\sqrt{6} - 7 \cdot 2\sqrt{6} + \sqrt{6}$   
 $3\sqrt{6} - 14\sqrt{6} + \sqrt{6}$   
 $(-10\sqrt{6})$

13.  $\sqrt{5} - \sqrt{45} + \sqrt{6} - 2\sqrt{150}$

$\sqrt{5} - 3\sqrt{5} + \sqrt{6} - 2 \cdot 5\sqrt{6}$   
 $\sqrt{5} - 3\sqrt{5} + \sqrt{6} - 10\sqrt{6}$   
 $(-2\sqrt{5} - 9\sqrt{6})$

14.  $5\sqrt{18} - 6\sqrt{45} + \sqrt{5}$

$5 \cdot 3\sqrt{2} - 6 \cdot 3\sqrt{5} + \sqrt{5}$   
 $15\sqrt{2} - 18\sqrt{5} + \sqrt{5}$   
 $(15\sqrt{2} - 17\sqrt{5})$

15.  $-\sqrt{14} + \sqrt{10} + 3\sqrt{10} - \sqrt{14}$

$-2\sqrt{14} + 4\sqrt{10}$

16.  $\sqrt{96} - \sqrt{24} + \sqrt{54}$

$4\sqrt{6} - 2\sqrt{6} + 3\sqrt{6}$   
 $(5\sqrt{6})$

17.  $25\sqrt{12} - 4\sqrt{108} + \sqrt{29}$

$25 \cdot 2\sqrt{3} - 4 \cdot 6\sqrt{3} + \sqrt{29}$   
 $50\sqrt{3} - 24\sqrt{3} + \sqrt{29}$   
 $(26\sqrt{3} + \sqrt{29})$

18.  $25\sqrt{5} - 4\sqrt{7} + \sqrt{5} - 2\sqrt{7}$

$(26\sqrt{5} - 6\sqrt{7})$

19.  $-\sqrt{10} - 4 - 2\sqrt{90} - 2$

$-\sqrt{10} - 4 - 2 \cdot 3\sqrt{10} - 2$   
 $-\sqrt{10} - 4 - 6\sqrt{10} - 2$   
 $(-7\sqrt{10} - 6)$

20.  $\sqrt{56} - \sqrt{14} - \sqrt{126}$

$2\sqrt{14} - \sqrt{14} - 3\sqrt{14}$   
 $(-2\sqrt{14})$